



# **Cracks** in the Education Pipeline:

**A Business Leader's Guide to Higher Education Reform**

Committee for Economic Development

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## **A Business Leader's Guide to Higher Education Reform**

**Committee for Economic Development**

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## EXECUTIVE SUMMARY

The United States has long been a leader in the global economy. But without improvements to our educational system, we are in danger of losing our preeminent position to nations with better academically prepared youth, whose rapidly increasing rates of college participation and graduation already outpace our own.

While reforms are underway in K-12 education, too many students, particularly those from minority and disadvantaged groups, are still not adequately prepared for postsecondary education. Solid academic preparation is increasingly important because a high school diploma is no longer sufficient in today's economy. Complementary reforms in higher education are the next step in improving our nation's human capital. Currently, too many students are lost in the transition from high school to college, and among students that do find their way onto campus, too few earn a college degree. Many students also find it increasingly difficult to afford a college education.

Economic and demographic pressures no longer allow us the luxury of making do with a small, elite cadre of highly educated citizens. Deregulation, globalization, and technological change have restructured employment and work processes, and new job growth tends to favor high-skill workers. Skill requirements in existing jobs are also increasing. Furthermore, demographic changes will add additional pressure as the baby boom generation retires, and new workers come from populations that have traditionally been less likely to attend college.

Maintaining economic competitiveness in the global economy begins with education reform in the states. *Measuring Up 2004: The National Report Card on Higher Education*, published by the National Center for Public Policy and Higher Education, provides a current snapshot, as well as historical perspective, on the status of higher education in each of the 50 states. This *Business Leader's Guide to Higher Education Reform* summarizes the findings of *Measuring Up 2004* and provides business leaders, as well as other stakeholders, with a map for engaging in higher education reforms at both the state and national level. Findings include:

**Most states have made progress in preparing students for college, but significant improvement is still needed.** Students are taking more rigorous course loads and performing better, on average, on some academic subject tests, but they perform poorly on international assessments, and high school graduation rates remain far too low. Too many students are still not academically proficient, and achievement gaps for minority and low-income students also need to be closed.

**College participation rates increased modestly over the past decade, but nearly two-in-five states did not improve access to college.** Only 38 percent of high school freshmen will earn a high school diploma and make the transition to college directly after graduation. Stagnating college participation rates are contributing to the natural slowdown in college enrollments. If all states had college participation rates that mirrored the best performing states, 8 million additional students would walk onto college campuses.

**Completion rates at colleges and universities have improved modestly in most states over the past decade, but graduation rates still remain low.** Estimates suggest that fewer than six-in-ten students earn bachelor's degrees within six years of enrolling in college, and nationwide, completion rates have only inched up over the past 30 years.

**Affordability continues to be an increasingly significant problem in higher education, with nearly all states performing poorly on affordability measures.** Tuitions have risen as state appropriations increases have not kept pace with rising costs, and shares of state appropriations dedicated to higher education have decreased. Student aid has increased, but favors loans rather than grants, and merit-based aid has been growing faster than need-based aid.

**Most states have enjoyed increased public benefits from higher education.** Higher income levels, lower levels of unemployment and welfare receipt, increased civic participation, and less crime are all associated with a more educated citizenry. Higher education's investment in research and development also provides a significant benefit to the economy.

College preparation, participation, completion, and affordability must all be improved if we are to maintain our current competitive advantage and increase the skilled labor force that businesses require. As in K-12 education, reforms in higher education will most likely occur at the urging of outside constituents. Business leaders can help launch change by:

- Demonstrating to the President, governors, Congress, state legislatures, and the public that supporting higher education is an investment that pays off.
- Continuing support for reforms in K-12 education that help prepare students for higher education.
- Encouraging increased investments in student aid that help more students attend and graduate from college.
- Supporting programs that provide many low-income and minority students with the finan-

cial assistance and guidance they need to attend and graduate college.

- Encouraging and assisting higher education in developing more efficient and effective management structures and systems.
- Encouraging public-private partnerships with educational institutions to exchange ideas, research, technological innovation, and workplace skill requirements.
- Promoting education through direct corporate involvement in tutoring, mentoring, scholarship and matching-grant programs that improve college readiness and affordability.

To ensure that students have the opportunity and financial means to enroll in college and earn a degree, systemic change will be required. We can no longer afford to use higher education as a filter into which many students enter, but from which only the best emerge.

## INTRODUCTION

The American system of higher education is generally considered world-class. We have Harvard, after all, as well as six of the other top ten universities in the world.<sup>1</sup> We also have more college graduates than any other country, with nearly one in three working-age adults holding bachelor's degrees.<sup>2</sup> But other countries are rounding the corner in the global education race. American elementary and high school students routinely fall in the middle of the pack on international assessments, and the United States has slipped to second place among young adults with college degrees.<sup>3</sup> College graduation rates have improved only marginally over three decades.<sup>4</sup>

Meanwhile, deregulation, globalization, and technological advances have changed the economic landscape. These forces have restructured employment and work processes, and upped the ante on education. Today, new avenues of competition both domestically and abroad, coupled with rapid increases in workplace technologies, require businesses to seek out more productive and skilled workers.

In the coming decades, education will continue to play an instrumental role in America's economic prosperity. Demographic changes will accompany economic changes to intensify the current premium placed on higher education. While globalization and technology will continue to alter the economic landscape, sizable demographic shifts already on the horizon will exert additional pressures—the baby boom generation will retire, and new workers will come from populations that have traditionally been less likely to attend college.

Future economic growth and individual opportunity will rest, in part, on the educational opportunities accessible to the current generation of youth. Measures have already been put in place to help states gauge how well they are educating their elementary and secondary students. Higher education, however, has largely been given a pass on the accountability movement that has swept through elementary and secondary education.

This *Business Leader's Guide to Higher Education Reform* relies and builds upon the findings from *Measuring Up 2004: The National Report Card on Higher Education* which provides an important perspective on the current state of higher education.\* Published by the National Center for Public Policy and Higher Education, *Measuring Up 2004* is the third in a series of biennial "higher education report cards" that develop performance-based benchmarks to gauge higher education performance in each of the 50 states. Findings from the most recent report card show:

**More students are prepared for college, but significant improvement is still needed.** Students are taking more upper-level and Advanced Placement (AP) courses, are performing better, on average, on some core subject tests, and are increasingly taught by qualified teachers. But the share of students performing below-average on tests of academic achievement is too large, and high school dropout rates remain alarmingly high.

**Gains in preparation have not translated into significantly higher rates of access and completion.** The share of college-age youth enrolled in college has increased only slightly over the decade, and modest increases in college completions are largely a result of increases in certificates rather than degrees.

**College is increasingly difficult to afford.** Even with increases in financial aid, the rapid rise in tuition has outpaced increases in family income, making college less affordable than ten years ago. In one-third of states, all measures of affordability have declined over the past decade.

Education is central to our economic and cultural well-being. America's institutions of higher education have done a commendable job educating many of their students, but we can no longer allow our higher education system to select only some of the best and brightest youth.

\* *Measuring Up 2004* and its associated state higher education report cards are available at <http://measuringup.highereducation.org>. Additional state data on K-12 and higher education performance, some of which was used in this report, can be found at <http://www.higheredinfo.org>.

Improving access and completion rates in higher education will require systemic change to ensure that 1) students receive better preparation for higher education, 2) institutions of higher education are affordable, particularly for disadvantaged students, 3) colleges and universities have the capacity to educate all students who are academically prepared to attend, and 4) higher education increases the financial and academic supports needed to help students graduate.

Implementing systemic change will not be easy. Parents and students are generally satisfied with higher education because it opens the door to opportunities and earnings that would otherwise be difficult to achieve. As a result, governors and legislators are cautious about implementing change in a system with which their constituents are generally satisfied. Higher education administrators may also have difficulty embracing systemic reforms that, while broadening opportunity, may threaten the elite status of higher education. Reforms will also be difficult without additional funding, and state leaders are already in the challenging position of balancing investments in education with funding needs for transportation, prisons, and Medicaid.

As in K-12 education, higher education reforms will most likely occur only at the urging of outside constituents. Engaging business leaders in the dialogue on higher education reform is a first step towards action.

This *Guide* provides business leaders with a starting point for establishing a dialogue on higher education reform. Business leaders have a vested interest in ensuring that our institutions of higher education remain accessible, accountable, and affordable, because higher education provides the skilled workforce that businesses increasingly need.

While significant changes will be required to ensure students receive the academic preparation, opportunity, support, and resources that allow them to navigate through high school, transition into college, and earn a college degree, wholesale change will not occur overnight. In the interim, there are several ways that business leaders can begin to launch change in their own states:

**Demonstrate to governors, state legislatures, and the public that budgetary support for higher education is an economic investment.** Unlike spending on competing public services, such as Medicaid, corrections, and public assistance,

investments in higher education can help states improve their economic position.

**Encourage and assist higher education in developing more efficient and effective management structures and systems.** Adopting recognized standards for quality management and implementing systems that improve efficiency and productivity can help higher education drive down costs and contain tuition increases.

**Encourage public-private partnerships with educational institutions.** Partnerships can help leverage private investment, promote regional economic development, and serve as forums for exchanging ideas, research, technological innovation, and workplace skill requirements.

**Promote education through direct corporate involvement.** Tutoring and mentoring programs can help improve student preparation, while scholarships and matching-grant programs can help make college more affordable.

At the national level, business leaders can lend their voices to legislative and appropriation dialogues to:

**Persuade the President and Congress that federal support for higher education is critical to national economic competitiveness and security.** Reframing the arguments for investing in higher education to focus on the public benefits may encourage lawmakers to increase spending of tax dollars on higher education, and academic research and development.

**Continue support for K-12 education reforms that help prepare students for higher education.** The accountability and achievement measures now in place in elementary education should be expanded into high schools. As the launching pad for postsecondary education and work, high schools reform efforts should focus on improving student achievement and reducing dropout rates.

**Encourage increased investments in student aid that help more students attend and graduate from college.** Periodic reauthorization of the HEA provides business leaders with an opportunity to weigh in on student aid provisions, including the increasing reliance on loans to finance higher education.

**Support programs that provide many low-income and minority students with the financial assistance and guidance they need to attend and graduate college.** Funding increases in need-

based Pell Grants will make it easier for low-income students to finance their education, but complementary programs that provide guidance to low-income students can also help them navigate the path to college.

efforts among business leaders, policy makers, and educators that result in a more accessible and affordable system of higher education will help ensure the United States has a skilled workforce that can adapt to the competitive pressures of a global economy.

Absent reforms, maintaining America's highly educated workforce will be difficult. However, coordinated

## MEASURING UP 2004

*Measuring Up 2004* provides objective, relevant, and timely information on the state of higher education. Like the two reports that preceded it, *Measuring Up 2004* includes information on educational performance at the national and state levels, including both public and private institutions, but does not provide information on individual colleges and universities.\* Often called the "higher education report card," the report evaluates education using a variety of measures organized into five performance categories:

**Preparation:** Measures how well students are prepared to enter higher education.

**Participation:** Measures how successful states are in providing opportunities for students to enroll in higher education.

**Completion:** Measures how successful higher education is in retaining and graduating students in a timely manner.

**Affordability:** Measures how well students and families can afford to pay for higher education given income levels and the availability of financial aid.

**Benefits:** Measures the economic and civic benefits associated with better-educated residents.

As in the previous reports, states are assigned a letter grade (A through F) based on their current-year snapshot performance, relative to other states, in each of the categories.<sup>+</sup> For the first time, *Measuring Up 2004* also includes an examination of the 10-year trends in higher education performance, and indicates the direction of change for each measure.<sup>‡</sup>

A sixth performance category with limited information is "learning."<sup>†</sup> Arguably the most important measure of higher education performance, learning is also the most difficult to measure. Without good measures to assess the additional knowledge and skills students receive from higher education, it is difficult to measure the quality of higher education. Until direct measures of learning are in place, evaluations of higher education performance are limited to indirect indicators of access, completion, costs, and benefits.<sup>†</sup>

\* Using states as the basis for higher education evaluations may seem overly broad given the diversity of higher education institutions in each state, but education is essentially a state responsibility. K-12 education has always been financed and managed at the state and local level, and responsibility for ensuring that all students receive an adequate education rests there as well. State officials generally have input into the funding and/or structure of their public higher education system, and funding decisions ultimately affect tuition levels. Tuition, in conjunction with the availability of state financial aid, impacts the ability of students and families to attend college. Economic development policies formulated by states also impact the economic opportunities available to graduates and affect their decisions about where to work and live.

<sup>+</sup> Because grades measure how well states perform relative to other states, a state's grade for its current-year performance can improve or drop even if its own performance remains constant or declines.

<sup>‡</sup> In each performance category, states and the nation are assigned an improvement indicator that shows whether they have made gains, suffered declines, or experienced little change over the past decade (relative to other states) on each of the five performance measures.

<sup>†</sup> While most states received an "incomplete" grade for this category, the five states (Illinois, Kentucky, Nevada, Oklahoma, and South Carolina) that served as pilot sites in an effort to gauge how well higher education improves learning were awarded a "plus" for their efforts. State literacy levels, performance on licensure, certification, and graduate admissions tests, as well as actual assessments of student knowledge, were used to gauge learning.

<sup>†</sup> One indication of the value of higher education is the earnings advantages of college graduates relative to high school graduates. This rising differential, in the face of an increasing supply of college-educated workers, indicates that employers value workers with college degrees, and the knowledge and skills the degree represents.

## State Highlights from *Measuring Up 2004*

The overall findings in *Measuring Up 2004* suggest that while students are better prepared today than a decade ago to enter college, little improvement has been made in enrolling students in college and ensuring they graduate. Furthermore, tuition increases are outpacing the increase in family incomes, making college more difficult to afford. States have a vested interest in ensuring their institutions of higher education are performing adequately because a more educated workforce and citizenry provide important social benefits.

**Preparation measures show that efforts to reform K-12 education have resulted in widespread improvements across states in preparing students for higher education, but progress has not been sufficient, nor evenly distributed across socioeconomic groups.** The 2004 snapshot of performance shows nearly one-half of the states receiving honor roll grades ("A" or "B") for student preparation. The Northeastern and Midwestern states lead the nation in preparing students for higher education, with Massachusetts ranking as the top performing state.

Decade-long changes in student preparation show substantial improvement, contributing to the stellar state grades in preparation. Over the past 10 years, nearly 90 percent of states have improved on more than one-half of the preparation indicators (see *Appendix*).

**Participation measures show that a majority of states received high grades for college enrollments, but only a handful of states have made progress over the past decade.** The 2004 snapshot of participation in higher education shows that more than one-half of the states received an "A" or "B" grade for college participation, and another 42 percent received a "C" grade. Massachusetts was again the top performing state in participation.

Trends over the past decade indicate that many states lost ground in college participation. Nearly

40 percent of the states showed declines on every participation indicator, while 46 percent showed varied improvement. Only 8 states registered gains on all participation measures.

**Completion rates at colleges and universities have improved modestly in most states, but graduation rates still remain low.** Fully two-thirds of states received honor grades in completion, while another 28 percent of states received "C" grades. Vermont ranked as the best performing state on completion measures.

While completion rates remain relatively low, nearly three-quarters of the states have made gains on a majority of the completion measures over the past decade, with six states showing gains on all measures.

**Affordability continues to be an increasingly significant problem in higher education.\*** Nearly all the states performed poorly on affordability measures, with 22 percent of the states receiving a "D," and the majority—36 states or 72 percent—receiving a failing grade. The best performing state, California, received a "B," while Minnesota and Utah each received a "C."

Comparing performance over the past decade, only two states, California and Louisiana, have improved on more than one-half of the affordability indicators. Slightly more than 6 in 10 states have improved on some indicators, while fully one-third of the states have recorded declines on every affordability indicator.

**The Benefits of having a highly educated population have been widespread across the country.** A significant majority of states have benefited from a well-educated population. Sixty-two percent of the states received honors grades because of the educational benefits derived from higher education, with Maryland receiving the highest state grade.

Over the past decade, most states have seen increases in the benefits derived from higher education. More than 80 percent of the states improved on at least one-half of the benefit measures, while another 16 percent had mixed results.

\* Unlike the other snapshot measures for 2004, state grades on affordability are influenced both by relative state standings and long-term trends. The affordability of higher education is graded relative to the performance of the top five states a decade earlier.

## ISSUES AND TRENDS IN HIGHER EDUCATION

Broadening opportunity in higher education will require more than a piecemeal approach to change. While improvements in some areas, such as academic preparation, are encouraging, isolated gains fail to capitalize on the synergies that arise from across-the-board improvements. Change will be required all along the educational continuum. In every state, too many students are lost as they progress through the educational pipeline (see *Figure 1*). For every 100 ninth grade students, only 67 make it to high school graduation, only 38 enter into college, and only 18 earn bachelor's degrees.<sup>5</sup> Preparing more students for college without simultaneous efforts to help them enroll, pay for, and graduate from college results in lost opportunities. However, making college more accessible and affordable for students who are not academically prepared will only contribute to the increasing costs of higher education.

### Student Preparation Is Critical to Success in Higher Education

Strong academic preparation increases the likelihood that students will attend and graduate from college. *Measuring Up 2004* shows that most states enrolled increasing numbers of students in upper-level math courses, although large gaps between the top and bottom states persist. National eighth grade test scores in math, science, and writing have improved, and more students are scoring higher on SAT/ACT and Advanced Placement (AP) exams. In addition, nearly all states have more students being taught by teachers with a major in the subjects they teach.

Strong academic preparation for college begins with rigorous course taking. Students who take a solid college preparatory curriculum are less likely to need remedial classes in college and are more likely to earn a degree.<sup>6</sup> The academic intensity and quality of a student's high school curriculum is the greatest measure of bachelor's degree completion.<sup>7</sup>

Transcript studies show that there have been steady increases in the number of courses students take in

the core academic subjects. In 2000, more than three-quarters of high school graduates completed a core academic curriculum\* compared with just over two-thirds of students a decade earlier.<sup>8</sup> Nearly one-half of students also now take an upper-level math course and almost one-third take an upper-level science course, an increase of roughly one-third over the past decade.<sup>9</sup> Some states, such as Nebraska, have large proportions of students enrolled in rigorous math courses (more than 60 percent), while other states, like Nevada, have fewer than one-third enrolled (see *Figure 2*).

The up tick in rigorous course taking is also evident in the proliferation of college-level AP courses and exams. Participation in AP has steadily increased over the past decades. Today, nearly 60 percent of U.S. high schools offer at least one of the 34 AP courses, and nearly one million students took an AP exam in 2002. In addition to receiving college credit, students scoring well on AP exams are more likely to earn honors grades in subsequent higher-level classes.<sup>10</sup>

For many elementary and middle school students, rigorous preparation in the classroom has translated into improvements in student achievement. Educational reforms, as well as the federal "No Child Left Behind" Act (NCLB), have primarily focused on grades K-8, and in a majority of states more eighth-grade students are proficient in math, science and writing than a decade ago.

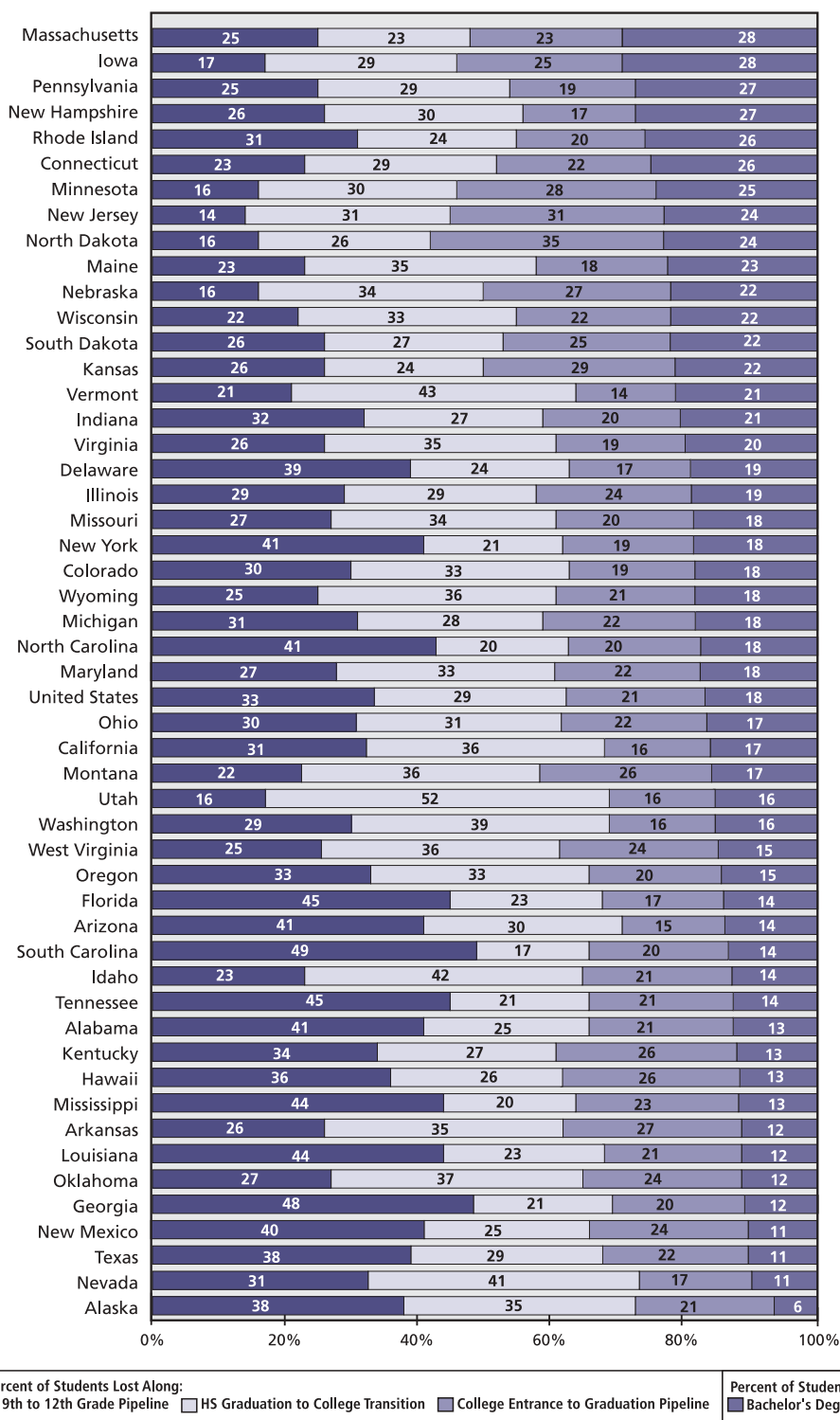
Despite improvements, there is still significant progress to be made in preparing students for college. While more students are taking a strong academic curriculum, only 31 percent of high school students complete the rigorous complement of courses recommended by the National Commission on Excellence in Education.<sup>+</sup> Furthermore, only 24 states require at least three years of math to graduate, and only 21 states require three years of science.<sup>11</sup>

Academic achievements in elementary and middle school have not persisted through high school. While America's high school seniors have made progress in

\* A core academic curriculum includes four English courses, three social studies courses, two science courses, and two math courses.

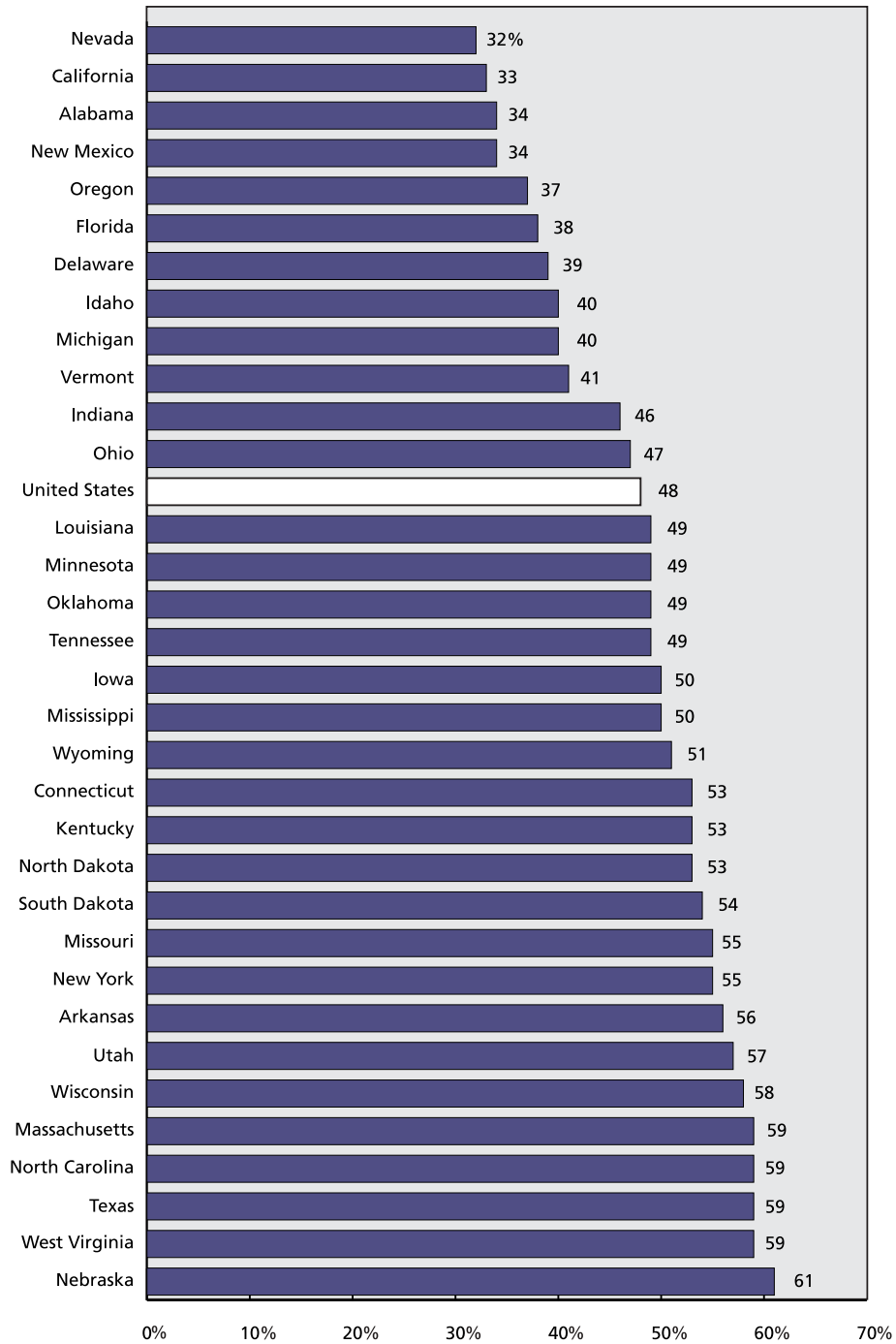
+ The National Commission on Excellence in Education recommends four courses in English, three social studies courses, three science courses, three math courses, two foreign language courses, and a one-semester course in computer science.

**Figure 1: Percent of 9th Grade Students Lost Along the Education Pipeline, and Percent that Attain Bachelor's Degrees, 2000**



Source: [www.higheredinfo.org](http://www.higheredinfo.org).

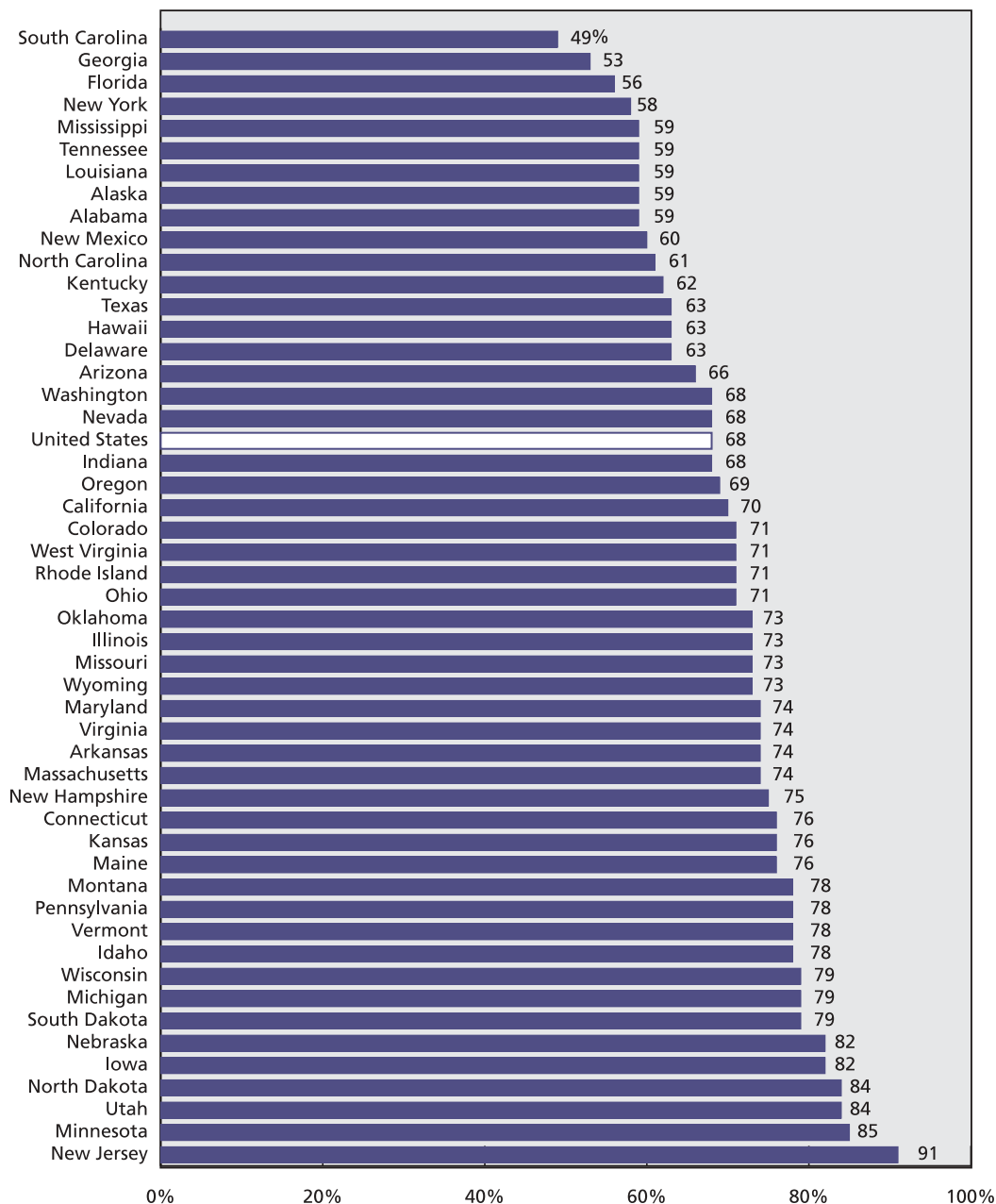
**Figure 2: Percent of High School Students Enrolled in Upper-Level Math, 2001**



Note: Upper-level math includes geometry, algebra 2, trigonometry, pre-calculus, and AP calculus. Data were not available for all states.

Source: <http://measuringup.highereducation.org>.

**Figure 3: Public High School Graduation Rates, 2002**



Source: [www.higherinfo.org](http://www.higherinfo.org).

mathematics, there has been no improvement in reading, writing, and science achievement over the past decade. Furthermore, fewer than one-in-five high school seniors are proficient in math and science, only about one-quarter of students write proficiently, and only 36 percent of students read proficiently.<sup>12</sup>

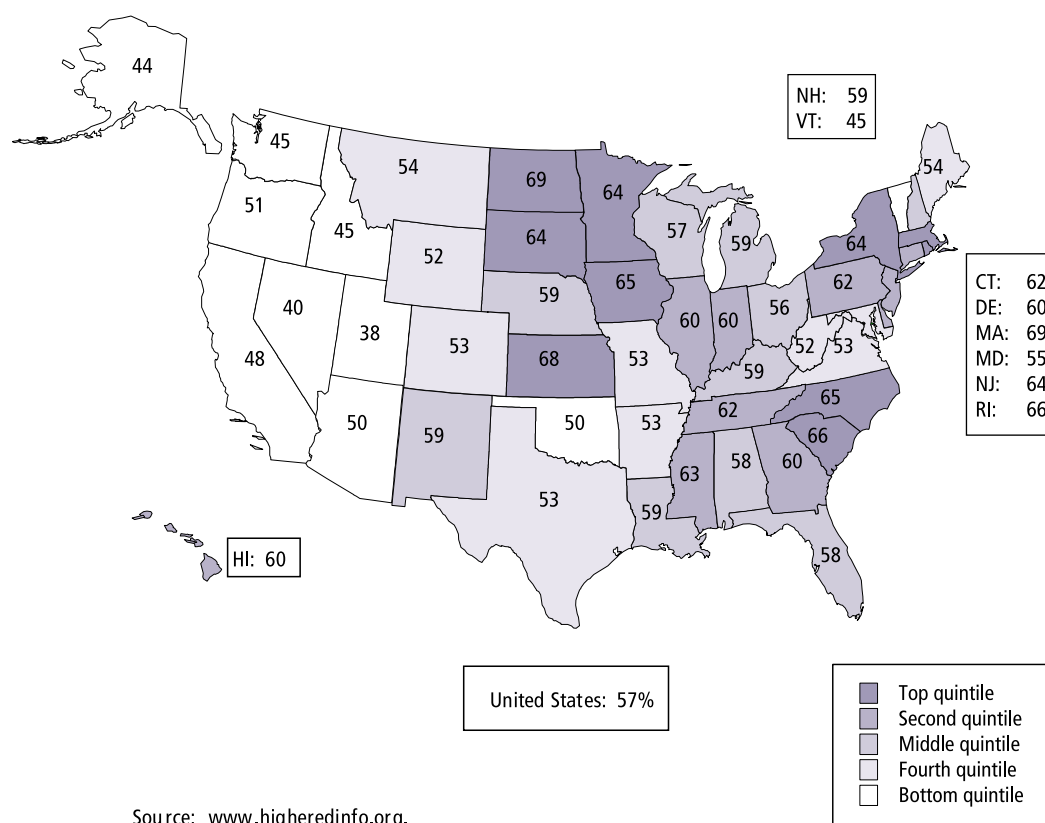
Internationally, U.S. students also lag behind students in other countries in math and science achievement. U.S. twelfth grade students score below the international average on assessments of math and science, and among the lowest of the 21 participating countries.<sup>13</sup> Similarly, assessments of applied math, science, and reading among 15-year-olds show that U.S. performance is only average when compared with other industrialized countries.<sup>14</sup>

Many students with low achievement never make it to their senior year. Almost one million students nationwide do not graduate within four years of starting high school.<sup>15</sup> Graduation rates of public high school graduates hover around 70 percent and vary significantly by state and race/ethnicity. More than 90 percent of students in New Jersey graduate

from high school, but fewer than one-half of the students in South Carolina earn a high school diploma (see Figure 3).

A significant problem in K-12 education is the disparity in preparation for minority and disadvantaged students. Seventeen year-old African American and Hispanic students have, on average, mathematics skills that are similar to those of White 13-year-old students.<sup>16</sup> Only 8 percent of low-income students take a rigorous course load, compared with 28 percent of affluent students.<sup>17</sup> High school graduation rates of minority groups tend to be particularly low; these students also tend to be less prepared for college. Just over one-half of Black and Hispanic students graduate from high school, and only 20 percent of Black and 16 percent of Hispanic students graduate ready for college.<sup>18</sup> As a consequence of low achievement and less rigorous course taking, only about one-half of low-income high school graduates are qualified for admission at 4-year colleges, compared to 86 percent of high-income students.<sup>19</sup> Even when low-income and minority students are adequately prepared for college, they are less likely to attend.

**Figure 4: Percent of High School Graduates Enrolling Directly in College, 2002**



Source: [www.higheredinfo.org](http://www.higheredinfo.org).

Once students do graduate, they often find that high school graduation requirements do not reflect college entrance requirements.<sup>20</sup> Only 32 percent of high school graduates are qualified to attend a four-year college.<sup>21</sup> The skills emphasized in high school course work and exams are frequently disconnected from those in college placement exams and course work. High school graduates meet one set of standards and then have to adapt to a new set of standards when they begin college.<sup>22</sup> Among the college-going student population, 53 percent take at least one remedial English or math class over the course of their college careers, and students who take multiple remedial courses are less likely to graduate from college.<sup>23</sup>

Teacher quality is critical in ensuring that students are prepared for college. Thus far, all states are “partially on track” to meet the NCLB goal of having a qualified teacher in every classroom, but no state has fully met this goal. Nationally, more than three-quarters of students are being taught by teachers with a major in the subject they teach, but schools with large proportions of economically disadvantaged students are much more likely to have out of field teachers.<sup>24</sup>

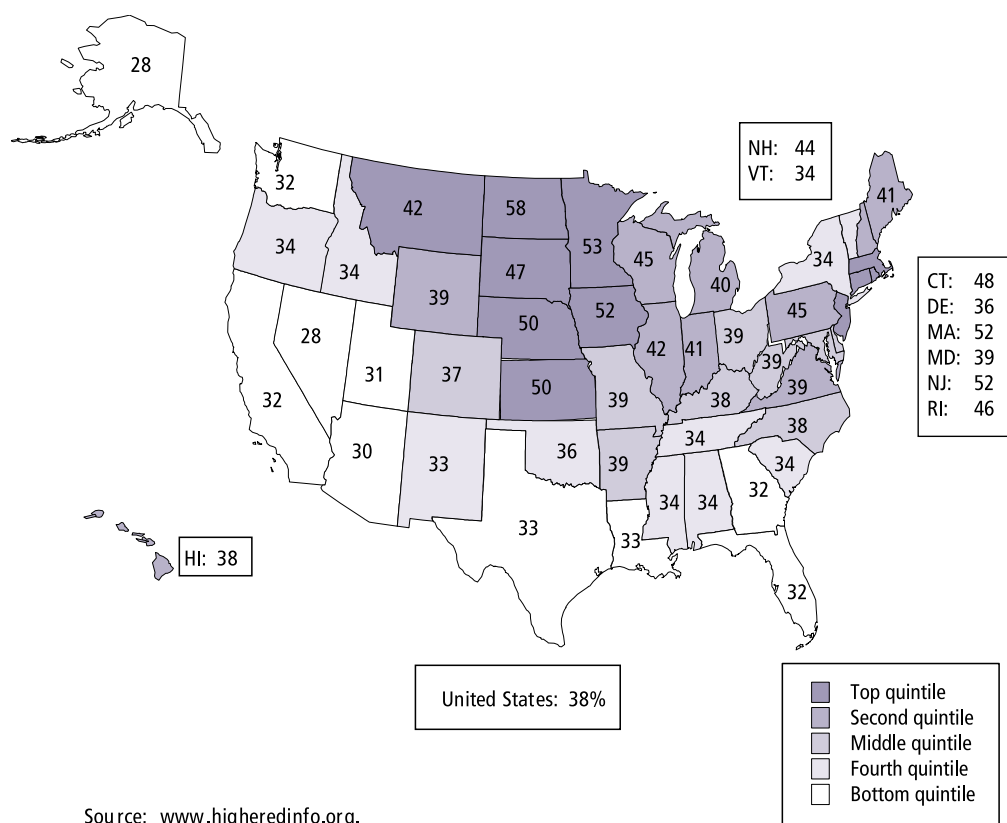
## Participation Rates Hinge on Improving Transitions from High School to College

In the past decade, only modest progress has been made in increasing access to higher education.

*Measuring Up 2004* shows that, on average, enrollment rates among college-age youth have increased, but nearly one-half of the states enrolled a smaller share of students than ten years earlier. States in the West and Southwest send the fewest students directly to college (see *Figure 4*). Nationally, and in about one-half of the states, the likelihood of a ninth grade student enrolling in college by age 19 has decreased slightly. The share of mid-career adults enrolling in higher education has also decreased in nearly all states relative to a decade ago.

Following a decade of stagnant college participation in the 1970s, the most rapid increase in college participation rates occurred during the 1980s and early 1990s. The proportion of recent high school graduates continuing immediately on to college increased from roughly 50 to 60 percent between 1980 and

**Figure 5: Likelihood of 9th Graders Entering College by Age 19, 2000**



Source: [www.higheredinfo.org](http://www.higheredinfo.org).

1990, and has only increased modestly since that time.<sup>25</sup> A broader measure, the share of all high school graduates 18- to 24-years old enrolled in college, shows a similar pattern during the 1970s and 1980s. In 2001, 36 percent of college-age youth were participating in higher education.<sup>\*26</sup> Larger increases in the rate of college enrollments among youth, relative to the slight increase in the rates of college participation immediately after high school graduation, suggests that students are delaying enrollments or remaining in college longer.

The likelihood of enrolling in college differs significantly by state. In the United States as a whole, 38 percent of high school freshmen will likely enroll in college by age 19. In the best performing states, more than one-half of students are likely to enroll in college, while in the worst performing states, fewer than 30 percent of incoming high school freshmen will likely enroll in college (see *Figure 5*).<sup>27</sup> Variations in student preparation, institution types and selectivity, tuition policies, and state financial aid all contribute to the differences.<sup>28</sup>

College campuses added about 2.8 million students between 1985 and 2000, increasing enrollments by 22 percent.<sup>29</sup> Even with the baby boomlet funneling through higher education over the next 15 years, at current participation rates, the number of college students is expected to increase by just 13 percent, or 2.2 million.<sup>30</sup> Stagnating college participation rates, coupled with faster growth in populations that typically have lower participation rates in higher education, are contributing to the slowdown in college enrollments. If all states had college participation rates that mirrored the best performing states, 8 million additional students would enroll in college.<sup>31</sup>

Even with double-digit increases in college enrollment projected for the next decade, half of the states will experience little or no growth in their traditional 18- to 24-year old college populations, and some will even have declines in college enrollments (see *Figure 6*).<sup>32</sup> Based on current participation rates, ten states are expected to see a decline in enrollment of traditional college-age students by 2015, with Iowa and West Virginia likely to have declines of 10 percent or more.<sup>33</sup> Nearly two-in-five states will have increases in

their total college enrollment that are less than one-half the national average increase of 13 percent.<sup>34</sup>

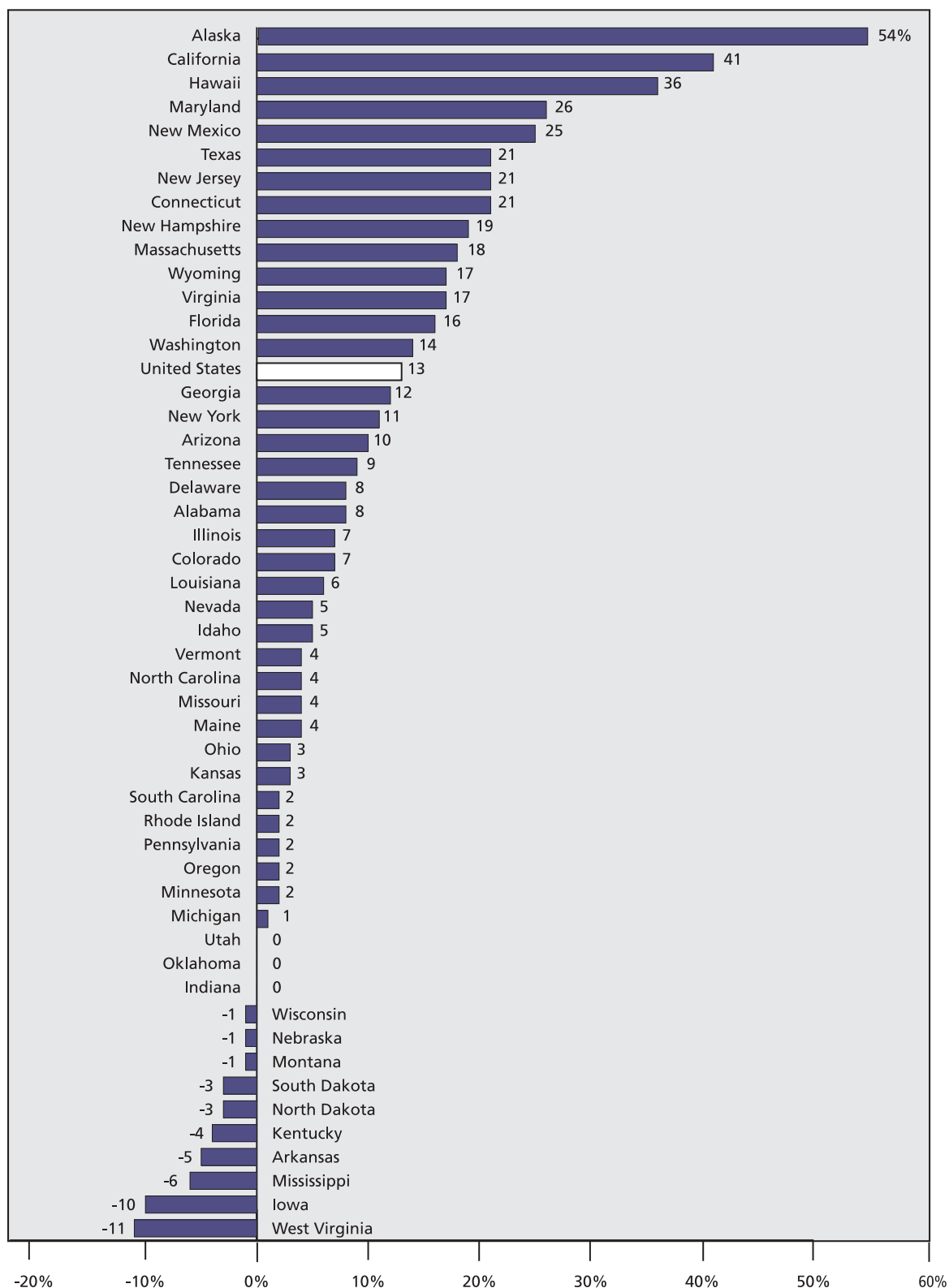
While minority groups have made gains in college access, their participation still lags far behind that of White students. The number of African American and Hispanic students enrolled in college has increased substantially since the early 1970s. Increasing participation rates for African American students, from 33 to 55 percent between 1973 and 2001, have boosted enrollments. However among Hispanic students, college participation rates have remained relatively flat and population increases account for the rising number of Hispanic youth attending college.<sup>35</sup> The college participation rates of both Black and Hispanic students remain substantially lower than that of White students. Enrollment rates of recent White high school graduates are about 10 percentage points higher than Black high school graduates and 15 percentage points higher than Hispanic graduates.<sup>36</sup> It is particularly important to close the gap in Hispanic postsecondary participation, because the Hispanic population is expected to increase by close to 50 percent over the next ten years.<sup>37</sup>

Low-income students, who are less likely to take a rigorous course load in preparation for college, are also less likely to enroll in college. The likelihood of low-income students graduating from high school and enrolling in college is 23 percent, compared to 38 percent for all students.<sup>38</sup> And even among highly qualified students, 80 percent of economically advantaged students enroll in a four-year institution within two years of their high school graduation, compared to only 44 percent of less-advantaged students.<sup>39</sup> Educational opportunities are forgone even when considering the lower cost of community colleges. Among qualified, less-advantaged students, 31 percent did not enroll in either a two- or four-year college.<sup>40</sup> Furthermore, less-qualified, high-income students are more likely to enroll in college (73 percent) than more-qualified, low-income students (69 percent).

In addition to lowering academic and financial barriers to college, altering educational expectations can also improve college participation. Students whose parents have a high level of educational attainment and whose friends place importance on education

\* The proportion of college-age high school graduates enrolled in college is 44 percent.

**Figure 6: Projected Percent Change in Postsecondary Enrollment Among 18 to 24-Year-Olds, 2000–2015**



Source: Sandra Ruppert, "Closing the College Participation Gap," Education Commission of the States, 2003.

are more likely to attend college.<sup>41</sup> In fact, in families with high educational expectations, 76 percent of students took a college entrance exam and scored significantly higher than the 28 percent of students in families with low expectations who took an exam.<sup>42</sup> Growing up in an environment that does not encourage higher education may limit students' expectations and discourage them from preparing for college.

## Low Rates of College Completion Result in Lost Opportunities

Increasing access to college is a laudable objective of higher education reform, but unless students graduate, reform efforts will also result in lost opportunities. Certainly completing some college course work is better than never attending college (and has some labor market advantages), but these students have fewer earnings and employment advantages than college graduates. *Measuring Up 2004* shows that student persistence in higher education remains troublesome in many states. Nationally, just over one-half of community college students return for a second year, and fewer than 75 percent of students in four-year schools return for their sophomore year (see *Figure 7*). Overall, retention rates in both two- and four-year schools have remained roughly constant throughout the decade. However in about one-half of the states, retention rates at two-year colleges declined; slightly fewer states had trouble maintaining their persistence rates in four-year colleges.

Over the past decade, most states made improvements in graduating larger shares of their students, but graduation rates still remain low (see *Figure 8*). Institutional estimates suggest that just over one-half (54 percent) of students earn bachelor's degrees within six years of entering college, with national graduation rates up slightly, by 4 percent, over the decade.

Tracking graduation rates of students, rather than institutions, shows that there are slightly more students (58 percent) obtaining bachelor's degrees within six years of enrolling in college.<sup>43</sup> Completion rates are even higher for students who entered college intending to pursue bachelor's degrees (63 percent). Studies that follow students over longer periods of time show that as many as two-thirds of students obtain bachelor's degrees within roughly a decade.<sup>44</sup> However, for more than 30 years, there has been little increase in the rate at which these students completed college.

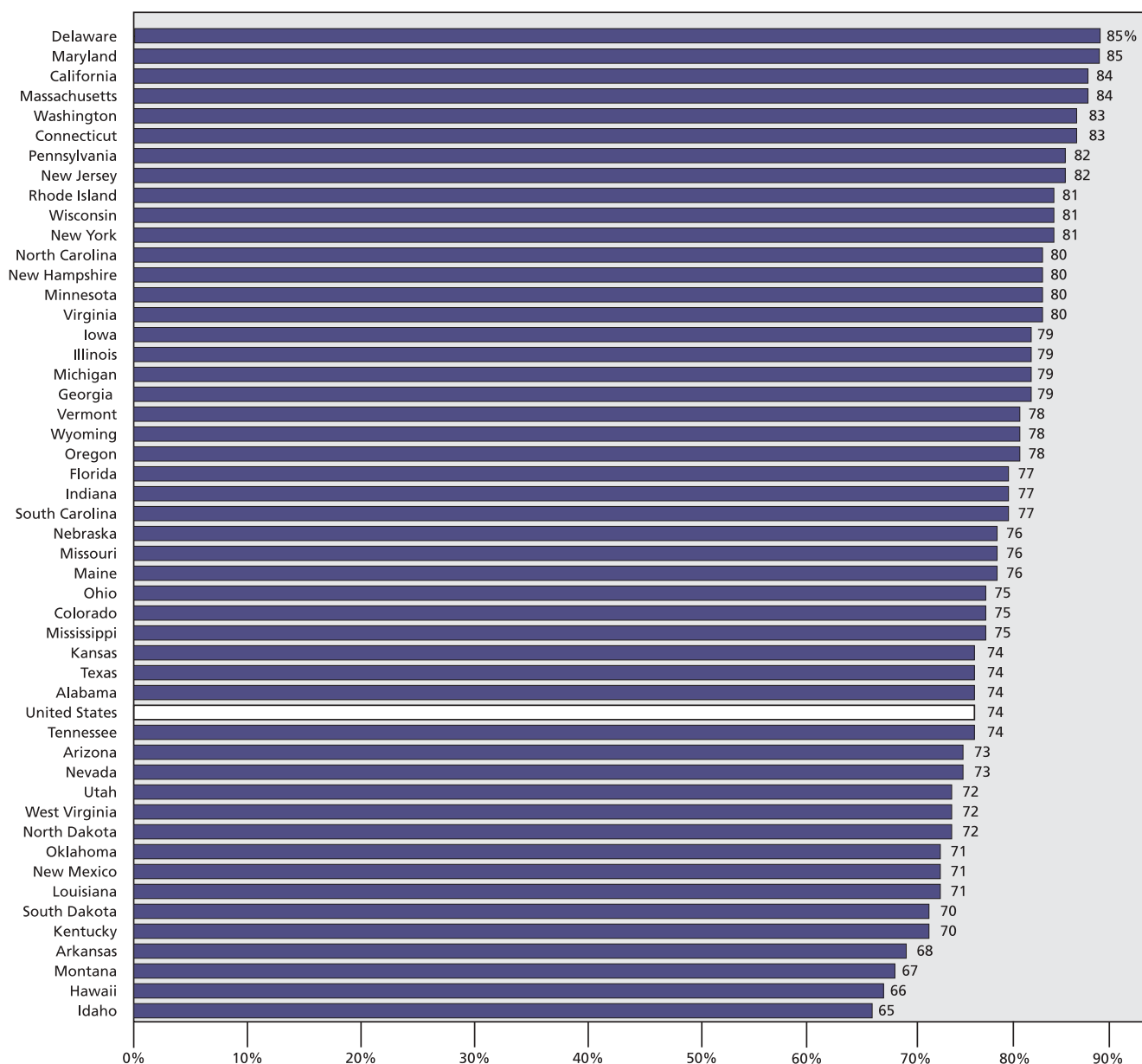
Graduating only about six in ten students translates into a loss of more than one-half a million students per year—students who are predominately from disadvantaged and minority groups.<sup>45</sup> The gap in completion rates between low-income and high-income students is significant. Only 54 percent of low-income college freshmen receive bachelor's degrees within six years, compared to 77 percent of high-income students.<sup>46</sup> Graduation rates for African American and Hispanic students are also about 20 percentage points lower than their White classmates. Less than one-half of Black and Hispanic students enrolled in college ever graduate.<sup>47</sup>

Many students are unable to earn a college degree because they are not adequately prepared. Limited reading abilities present a particular disadvantage to completing college. Only 39 percent of college students who completed remedial reading courses earned bachelor's degrees compared to 69 percent of students who needed no remediation.<sup>48</sup> However, other remediation needs present less of a barrier to graduation. Sixty percent of students who required a non-reading remediation course still graduated from college. And while participation in AP courses helps students prepare for college, they have an even stronger effect on helping students graduate.<sup>49</sup>

While preparation and persistence increase the likelihood that students don a cap and gown on graduation day, collegiate environments also play a role. Graduation rates vary widely across institutions. Twenty percent of four-year institutions graduate less than one-third of their freshmen within six years.<sup>50</sup> Even among similarly competitive colleges and universities, institutional graduation rates vary widely. For example, Elizabeth City State University, a historically Black university in North Carolina, graduates 60 percent of its African American students within six years, compared with 37 percent of Black students in institutions with similar competitiveness and size. Efforts aimed at retaining and graduating students can have sizable effects. For instance, Louisiana Tech's efforts increased its six-year graduation rate from 35 percent in 1997 to 55 percent in 2002.<sup>51</sup>

While U.S. colleges and universities have made limited progress in college enrollment and graduation since the early 1990s, other countries have been ramping up. The United States has the fourth largest share of youth age 18- to 21-years old enrolled in higher education, behind Greece, Korea, and Belgium.<sup>52</sup> However, the United Kingdom, Ireland,

**Figure 7: Share of First-Year Students in Four-Year Colleges Returning for Their Second Year, 2001**



Source: [www.higheredinfo.org](http://www.higheredinfo.org).

It is widely known that college costs have risen sharply in recent years. Over the course of a decade, average tuition and fees at public four-year institutions (\$5,132 in 2004-2005) have increased by 51 percent (in inflation-adjusted dollars), while costs at public two-year colleges (\$2,076) have risen by 26 percent. Private four-year colleges have seen their average tuition rise by 36 percent (\$20,082) in the past ten years.<sup>55</sup>

Tuitions have been rising, in part, because state funding for higher education has not kept pace with increasing costs. In the aggregate, state appropriations for higher education have increased every year in the past decade (except in 2003-04).<sup>56</sup> However, comparing state appropriations for higher education relative to various other economic measures all indicate state support for higher education has declined. State appropriations for higher education relative to personal income have declined from \$8.53 per \$1,000 of personal income in 1977 to \$7.07 in 2002.<sup>57</sup> Higher education appropriations relative to state spending have declined from 7.3 percent in 1977 to 5.3 percent in 2000, and state appropriations as a share of public university revenues have declined from 46.5 percent in 1977 to 34.4 percent in 2000.<sup>58</sup>

Financial support for higher education varies by state. In 2004-05, state appropriations outpaced inflation in 21 states, but in 8 states, funding declined after adjusting for inflation.<sup>59</sup> In more than one-fifth of states, appropriations increases over the past decade have not kept pace with inflation. In addition, seven

United States: 54%

Legend:

- Top quintile
- Second quintile
- Middle quintile
- Fourth quintile
- Bottom quintile

State Percentages:

- AK: 20
- HI: 44
- NH: 62
- VT: 63
- CT: 62
- DE: 62
- MA: 66
- MD: 64
- NJ: 61
- RI: 64

15

states with recent funding increases have not recovered from previous cuts and still have budgets lower than two years prior.<sup>60</sup>

Even with state appropriations increasing in many states, the share of state funds dedicated to higher education has been steady or declining (see *Figure 9*). As a result, state and local governments contribute only about 40 percent to current fund revenues in public colleges and universities, down from 44 percent a decade earlier and 49 percent in 1980. While the federal share of revenue contributions has remained relatively constant at roughly 10 percent, tuition and fees comprise an increasing share of revenue, rising from 16 to 18 percent, as have private gifts, grants, and contracts.<sup>61</sup>

Business cycles and competing budget priorities have affected spending on education. Elementary and secondary education, homeland security, corrections, and health care are all competing for tight public monies. And although state spending on higher education tends to increase during economic booms, after the 1991 recession, states did not resume their pre-recession levels of higher appropriations until 1999.<sup>62</sup> If states had maintained the relationship between personal income levels and higher education appropriations that existed in 1977, today's appropriations for higher education would be about 20 percent higher.<sup>63</sup>

Rising college tuitions have outpaced increases in family incomes, making it increasingly difficult for families to pay for college. The average family will spend about 22 percent of its income to enroll a student in a community college, up from 20 percent a decade ago. The largest decline in affordability has been among public four-year colleges and universities. The typical family will spend about 28 percent of their income to send a student to a public four-year college, up from 24 percent a decade ago, an increase of 17 percent. Nevertheless, public colleges are still a bargain compared with private educational institutions where the average family will have to budget 68 percent of their income to enroll a student. Even in the best performing states, more than one-third of the average family's income will go to pay for a private college.

Low-income families are at a particular disadvantage in the current environment. Families with incomes in the bottom 40 percent of the earnings distribution, typically earning less than \$37,000 a year, need to

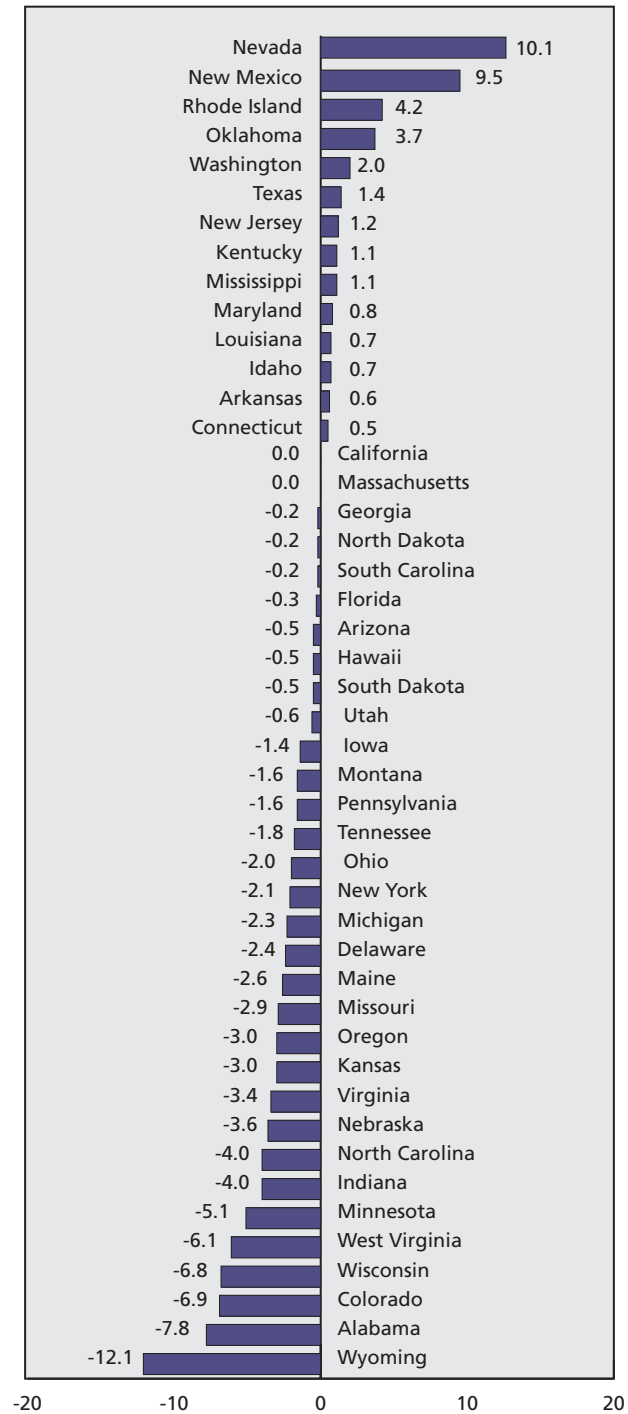
spend about one-third of their income to send a student to a community college, and 43 percent of their income to enroll him or her in a public four-year institution. In seven states, these families would need to spend more than one-half of their income for a student to pursue a bachelor's degree at a state college or university (see *Figure 10*).

Many families are not able to finance postsecondary education straight out of pocket and are therefore dependent on financial aid. States are now allocating more of their education spending directly to students rather than to institutions. As state higher education budgets are squeezed, student aid is helping offset rising tuitions, but student aid comes increasingly in the form of loans and tax credits rather than grants. Overall, loans makes up 56 percent of total aid, and grants comprise another 38 percent, with work and tax credits accounting for the remainder.<sup>64</sup> As a result, annual loan burdens among undergraduates have increased by 14 percent, or more than \$400 (from \$2,932 to \$3,344), over the past decade. In the 1999-2000 school year, 65 percent of students who earned bachelor's degrees borrowed an average of \$19,300, up from about one-half of graduates with loan burdens in the 1992-93 school year, borrowing on average \$12,100 in inflation-adjusted dollars.<sup>65</sup>

Pell Grants are the largest source of need-based aid that the federal government provides. After a decline in actual and inflation-adjusted Pell Grant expenditures in the early 1990s, funding has nearly doubled since 1995 and in 2003-04 was estimated at roughly \$12.7 billion. The program has also expanded participation significantly since 2000, with the number of Pell Grant recipients increasing by nearly one-third to 5.1 million students.<sup>66</sup> These changes have reversed a slow decades-long decline in the value of maximum Pell Grant awards. However, the current maximum grant, \$4,050 in 2003-04, is still below the inflation-adjusted value in the late 1970s. The average Pell Grant awarded to recipients has remained relatively constant, at roughly \$2,000 per student, throughout the 1980s and early 1990s. Since the mid 1990s, the average Pell Grant has steadily increased and in 2003-04 averaged \$2,466 per recipient.<sup>67</sup> Pell Grants are an important source of aid, not only because they are need-based, but because they also lead to increased student retention at colleges and universities.<sup>68</sup>

Even with recent increases in federal Pell Grants, in more than one-half of states, state need-based aid is increasing relative to federal support. A decade ago,

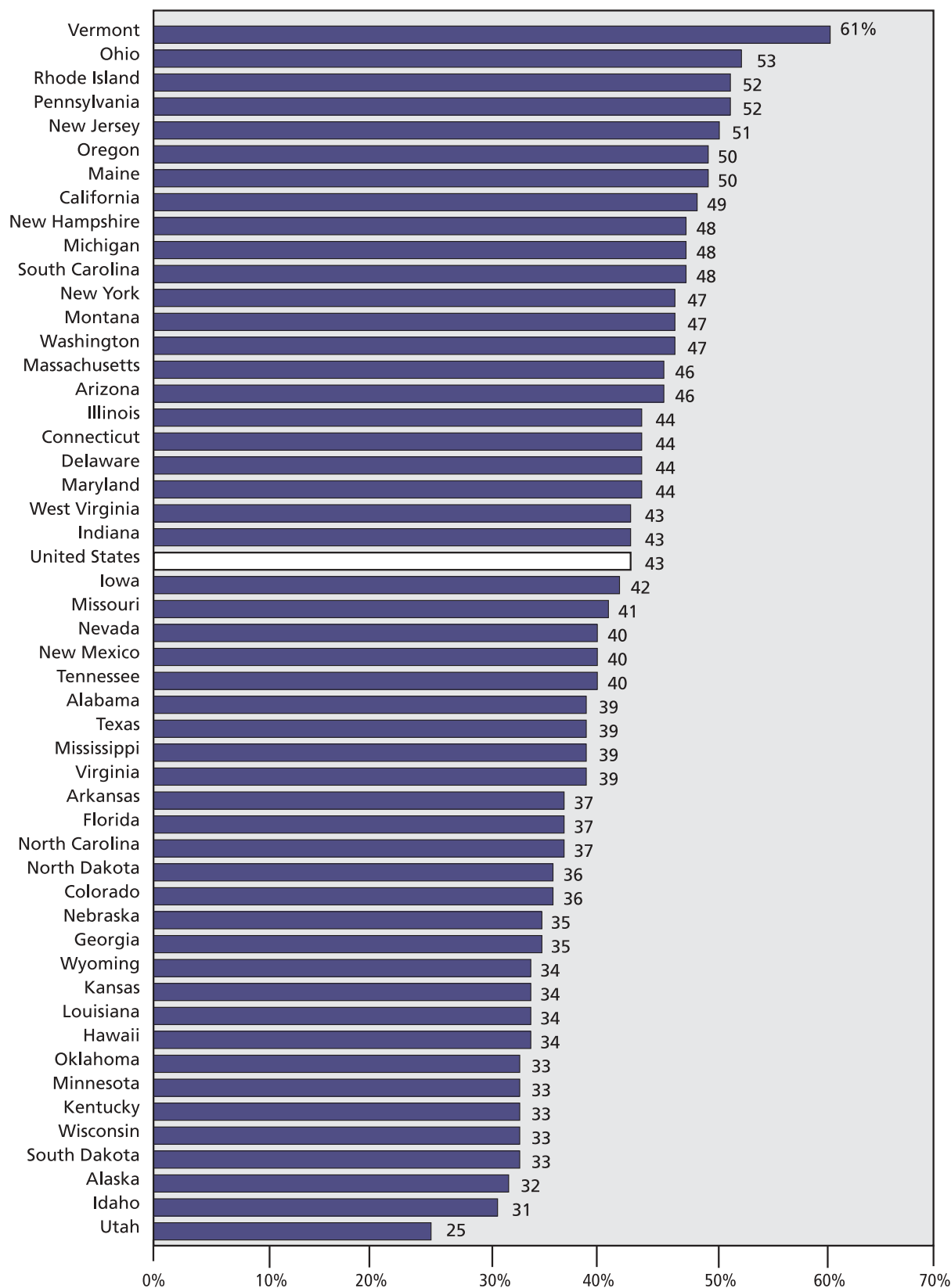
**Figure 9: Percentage Point Change in the Share of State Appropriations Dedicated to Higher Education, 1990–2003**



Note: Data not available for Alaska, Illinois, New Hampshire, and Vermont.

Source: <http://measuringup.highereducation.org>.

**Figure 10: Net College Costs of Public Four-Year Universities as a Percent of Family Income for the 40% of the Population with the Lowest Income, 2003–2004**



Source: <http://measuringup.highereducation.org>.

state investments in need-based aid stood at 33 cents for every federal dollar spent; today that has increased to 40 cents on the dollar. Nevertheless, state student aid is increasingly becoming merit-based. Merit aid is awarded regardless of financial need and now accounts for 25 percent of state grants, up from 10 percent a decade ago. Twelve states now have merit “scholarships” awarded using differing criteria, such as grade point averages, SAT/ACT scores, state achievement test scores, and combinations of the three.<sup>69</sup> Merit aid programs, such as those in Nevada and Michigan, are often different from other state-funded programs because their revenues typically come from lottery revenues or tobacco litigation settlements.<sup>70</sup> Unlike most state programs, merit aid programs are not subject to budgetary pressures because of these dedicated funding sources.

Merit aid is popular for several reasons. The notion that students are “earning” these awards is easy for the public to support, and thus politically popular. In addition, all students in the state are eligible, whereas need-based aid is available only to a small segment of the population. State legislators also use the scholarships to keep students at in-state schools, where they will be more likely to stay after graduation and improve the state’s economy.

Student aid has the greatest impact when targeted on low-income students who otherwise would not enroll in college. However, merit aid flows disproportionately to middle- and upper-income students. Merit-based aid may divert funding and resources from need-based aid programs, and students who receive the scholarships may have attended college without them. But merit aid programs generally increase the probability of attending college by five to seven percent.<sup>71</sup> Still, merit scholarships may impact college *choice* more than college participation.

Tax credits have recently become a popular way to help with college costs, although again, the benefits largely accrue to middle-class families. The Hope Tax Credit (HTC) and the Lifetime Learning Tax Credit (LLTC) are both federal tax credits that allow annual deductions of \$1,500 and \$2,000, respectively, to offset out-of-pocket college costs.<sup>72</sup> The federal government is projected to spend 50 percent more on these tax credits than on funding for Pell Grants.<sup>73</sup>

Unlike other forms of student aid, tax credits are received long after tuition bills arrive in the mail. As

a result, they are of limited use in improving access to college. There is little evidence that overall enrollments of students in postsecondary education increased in the three years after the tax credits were implemented.<sup>74</sup> However, grants, which provide money up front, may also have negative effects if they encourage unprepared students to enroll.<sup>75</sup> In general, the delay in receipt of tax credits provides less of an incentive for colleges to raise tuition prices since a family’s present ability to pay is unaffected. Schools that had tuition between \$1,000 and \$2,000 did raise their tuition prices by 18 percent after the tax credits were implemented, but other institutions did not have similar increases.<sup>76</sup> However, state governments appear to have reduced appropriations for two-year colleges due to the tax credits.<sup>77</sup>

Some universities are taking steps on their own to help with college costs. In 2003 the University of North Carolina at Chapel Hill began giving low-income, qualified freshmen enough financial aid to graduate debt-free. Similarly, Illinois legislators passed a provision requiring public universities to hold tuition levels in place for each incoming class.<sup>78</sup> Harvard University also announced that students from families earning less than \$40,000 a year would no longer be required to contribute any money toward their education.<sup>79</sup>

Higher education tends to favor raising tuitions rather than cutting costs when budgets are tight. Academic institutions, particularly selective ones, are always striving to provide the best education, facilities, and services, so that students will select their schools. Cutting services is rarely on the agenda because schools are always trying to increase and improve them—and improving services often translates into increased spending.<sup>80</sup> Academic research is also costly, particularly in the physical sciences, but necessary for universities to maintain academic rigor as well as academic standing. Administrators and trustees often face resistance from faculty and students when trying to eliminate programs.<sup>81</sup> School rankings can also be affected if budget cutbacks cause expenditures per student to decline.<sup>82</sup>

## Society Benefits from Investments in Higher Education

States receive both economic and civic benefits from strong systems of higher education. All 50 states have increased their share of citizens holding bache-

lor's degrees over the past decade. States benefit by having highly educated residents because they tend to have higher income levels, pay more into tax coffers, have lower levels of unemployment, and less need for public assistance—all benefits that help a state's bottom line. College graduates earn about 73 percent more over the course of their working lives than high school graduates.<sup>83</sup> Over the past decade, two-thirds of states saw increases in their personal income resulting from an increase in the number of bachelor's degree holders. An educated workforce also allows states to compete for business investment projects that will bring high-skill, high-wage jobs.

The research and development (R&D) undertaken at colleges and universities also has broad economic benefits. By nurturing technology and innovation, R&D can drive business improvement and growth. The general public benefits from increased economic development, and in turn, an improved quality of life. Currently, the U.S. invests an average of \$124.17 per capita in academic R&D.<sup>84</sup> The private rate of

return on investment in academic R&D is high—between 25 to 30 percent—and the social rate of return is estimated to be close to 50 percent.<sup>85</sup> It is estimated that funding for academic R&D directly supported, or indirectly impacted, over one million jobs in 2001.<sup>86</sup>

Society also benefits from higher education. Higher levels of educational attainment are associated with increased civic participation, better health, and less crime. Indeed, in the top performing states, 60 percent of residents voted in national elections, 92 percent donated money to charitable causes, and volunteering was 22 percent higher as a result of the state's college graduates. College graduates are also less likely to smoke and more likely to report they are healthy, helping keep health care costs down.<sup>87</sup> In addition, more-educated populations are less likely to commit crimes, reducing incarceration costs, legal costs, property loss, and pain and suffering among victims.

## THE ECONOMIC IMPERATIVE FOR HIGHER EDUCATION REFORM

Economic and demographic pressures no longer allow society the luxury of making do with a small, elite cadre of highly educated citizens. Technology, along with the globalization of product and capital markets, has significantly altered the structure of work in the United States. Computers have taken over a large share of routine cognitive and manual tasks (such as evaluating mortgage applications or assembling cars). Much of the work that remains involves complex thinking to utilize, manage, or develop technology, or requires non-standard interactions that cannot be computerized.<sup>88</sup> The elimination of trade barriers has further altered the job structure in the United States, creating global competition among workers and eliminating many labor-intensive, low-skill jobs (such as textile manufacturing), in addition to many routine cognitive jobs (such as computer programming).

The effects of technology and globalization are twofold. First, new job growth tends to favor high-skill workers, and second, the skill requirements in existing jobs increase. Since 1959, the largest increase in the share of jobs occurred in office jobs dominated

by highly skilled managerial and professional workers. The share of office workers increased from 30 to 39 percent between 1959 and 2002. Education and health-care jobs, staffed with similarly high-skilled workers, increased from 10 to 15 percent of all jobs. Technology-related jobs have almost doubled over the same period, but still account for only about 7 percent of all jobs.<sup>89</sup>

Well-paid, blue-collar jobs that used to provide a middle-class lifestyle for high school-educated workers have suffered the most devastating losses. The share of factory jobs has decreased by nearly one-half, from 32 to 17 percent, primarily as a result of productivity improvements rather than trade.<sup>90</sup>

Increasing skill requirements within jobs are reflected in the increased educational attainment of the workforce. As recently as 1973, only 28 percent of prime-age workers (age 30 to 59) had some postsecondary education, with 16 percent holding bachelor's or advanced degrees. By 2001, the share of prime-age workers with at least some postsecondary

education had more than doubled to 60 percent—and nearly one-third had bachelor's or advanced degrees. The increase in educated workers has permeated all segments of the economy, even in manufacturing, where in 1973, more than one-half of factory workers were high school dropouts compared with one-in-five today.<sup>91</sup>

Most of the increases in educational attainment occurred prior to 1980. A slowdown in the growth of educational attainment has persisted since that time in spite of the increasing demand for highly educated workers. The unmet demand for skilled workers is made evident by the rapid increase in the college wage premium. Between 1979 and 2003, the wage advantage of college-educated workers relative to high school educated workers increased from 40 to 73 percent.<sup>92</sup>

The cost of not getting a college education has increased sharply in the past 25 years. Changes in the structure of work have left the least-skilled workers in a precarious economic position, with decreasing opportunities to earn enough to support a middle-class lifestyle. The inflation-adjusted wages of male high school graduates and dropouts have declined by 8 and 21 percent, respectively since 1979, while the wages of college graduates have increased by 20 percent. Today, male high school graduates earn about \$1.25 less per hour than in 1979, while college graduates earn almost \$4.50 more per hour.<sup>93</sup>

Women have fared somewhat better, with high school graduates earning 12 percent more in 2003 than 1979. However, female high school dropouts still suffered declines in their inflation-adjusted earnings of 4 percent. Female college graduates have accumulated the largest earnings gains, increasing by 40 percent since 1979.<sup>94</sup>

The advantages of higher education extend beyond earnings. College graduates are more likely to participate in the labor force and are more likely to be employed—the unemployment rate of college graduates is roughly one-half the rate for adults with only a high school diploma.

With advances in technology and increases in globalization expected to continue, past economic changes favoring highly educated workers are expected to persist. These forces and their accompanying productivity improvements have allowed the United States to grow its economy and increase its standard of living in spite of the recent stabilization in rates of educational attainment.

Education has been a major source of productivity growth in the United States during the post-war era. Education increases productive human capital, which in turn contributes to overall increases in economic growth. Increases in a country's average level of educational attainment by one year can generate sizable increases in annual economic growth—as much as 6 to 16 percent.<sup>95</sup>

Increasing a country's human capital can also influence growth by altering the way the nation invests in physical capital. Countries with high levels of education are fertile ground for investments in new productivity-enhancing technologies.<sup>96</sup> However, it is difficult to implement these complex technologies in countries where the workforce does not have the complementary skills required to manage them.

The economic and demographic changes currently underway suggest that higher education will play a critical role in the years ahead if the United States is to maintain its preeminent economic position.

## DEMOGRAPHIC CHANGES ON THE HORIZON

Demographic changes on the horizon will make it increasingly difficult to maintain a skilled workforce without engaging more students in higher education. Two demographic changes, the graying of the labor force and the projected increase in the minority population, will have a substantial impact on the United States' economic position.

Buoyed by the baby boom generation, the U.S. workforce increased by almost 50 percent over the past 20 years. The sheer number of boomers and the increase in labor force participation among women contributed to the rapid growth in the workforce. The highly educated baby boom generation has already begun to retire, with retirements picking up in 2008 and continuing through 2029. As the baby boomers retire, labor force growth is expected to slow to only 16 percent over the next two decades. The prime-age 25- to 54-year old workforce that increased by 35.1 million workers between 1980 and 2000 will add only 3.0 million workers through 2020.<sup>97</sup>

Projections suggest that minorities will account for the largest increases in the population in the coming years. As a result, growth in the labor force over the next two decades will come primarily from workers that tend to have lower levels of educational attainment, contributing to the slowdown in the growth of college-educated labor. While the college-educated labor force more than doubled between 1980 and 2000, increasing by 107 percent, without increases in the rate of educational attainment, the college-educated labor force will likely grow by less than one-third over the next 20 years. As a result, the share of

the adult labor force with a college degree is projected to increase only by 1.5 percentage points by 2020, significantly less than the 8.6 percentage point increase since 1980.<sup>98</sup>

If the expected slowdown in growth of the college-educated labor force occurs, U.S. productivity growth will also increase more slowly. Increases in workforce quality of 0.50 percent a year between 1915 and 2000 contributed about 0.35 percentage points per year to economic growth. Declines in labor force quality could cut the rate of productivity growth attributed to education by one-half or more (to between 0.06 and 0.17 percent) over the next 20 years. As a result, productivity growth could be reduced by as much as 0.29 percentage points a year, limiting wage growth and fiscal revenues.<sup>99</sup>

There is no easy way to relieve the anticipated shortage of skilled workers. Programs that encourage workers to delay retirement will likely result in the continued employment of those less-skilled workers who typically have limited accumulation of retirement savings.<sup>100</sup> Encouraging increases in labor force participation will be difficult in light of the current high rates of participation. Similarly, increased immigration is a politically difficult alternative. Technological improvements make it easier to shift routine work abroad, but workers will still be required for the highly conceptual and complex jobs that remain in the United States. Working to improve access and participation in higher education is the most plausible option for increasing the human capital available in the United States.

## BUSINESS LEADERS' ACTION STEPS

Education is a catalyst for future economic growth and international competitiveness. If the United States is to maintain its strength in an increasingly global economy, its education system must be fully accessible and affordable for an increasingly diverse clientele. To ensure that students have the opportunity and financial means to attend and graduate from college, systemic change will be required. It is not practical to use higher education as a filter into which many students enter, but from which only the best emerge.

Business leaders have opportunities at both the national and state levels to affect educational change. At the national level, business leaders should lend their voices to legislative and appropriations dialogues to:

**Persuade the President and Congress that federal support for higher education is critical for economic security as well as social equity.** Higher education competes for funding in Capitol Hill budget battles with other costly and pressing concerns such as national security, social security, and health care. But the decades-long focus on higher education as a lever for equity and opportunity may have made it more difficult to secure additional funding for what is increasingly viewed as a private individual benefit. Reframing the arguments for investing in higher education to include economic competitiveness and security in addition to equity considerations will provide the President and Congress with additional justification for spending tax dollars on higher education.<sup>101</sup> As with primary and secondary education, higher education is no longer a luxury, but an economic necessity.

In addition, much of the research and development that is critical to advances in knowledge and technology occurs at U.S. colleges and universities. Academia fuels innovation in many sectors—including agriculture, manufacturing, and services—which leads to economic development and results in an improved quality of life. The United States allocated 75 percent of its academic R&D expenditures on the natural and medical sciences in 1999, but lags behind other countries in expenditures on engineering.<sup>102</sup> Business leaders can support increased industry and federal investment in academic research and development, particularly in engineering.

**Continue support for K-12 education reforms that help prepare students for higher education.** The No Child Left Behind Act, implemented in 2002, holds states accountable for student performance. Testing mandates in NCLB provide important information by creating a gauge for student achievement. However, identifying academic deficiencies is only a first step in education reform. Continued academic progress in our nation's elementary schools will require additional resources, allowing low-achieving schools to implement changes that improve student learning. Flexible solutions, rather than punitive measures, will also give low-performing schools the assistance they need to make educational improvements.

Business leaders can also lend support to legislative efforts aimed at high school reform. Largely ignored by NCLB, high schools have received short shrift in overall K-12 education reform efforts until recently. The accountability and achievement measures now in place in elementary education should be expanded into high schools. As the launching pad for post-secondary education and work, high schools should aim reform efforts at improving student achievement and dropout rates.

**Encourage increased investments in student aid that help more students attend and graduate from college.** The Higher Education Act of 1965 (HEA) authorizes loan and grant programs that provide students with financial support to attend college. Periodic reauthorization of the HEA provides business leaders with an opportunity to weigh in on student aid provisions. While increases in loan and grant funding levels are always a central part of the reauthorization, program expansion will also likely be at issue. As the distribution of aid has shifted towards loans and away from grants and work study, many new college graduates are left with substantial loan burdens. Further expansion of loan programs without commensurate increases in grant and work study monies will further exacerbate this trend.

Most student aid programs were designed with the "traditional" 18- to 24-year old, full-time, on-campus students in mind. As a result, loan programs are based on the credit system that precludes alternative education such as certification programs. Similarly, the Pell Grant program allows only one grant per year, prohibiting many students from taking summer courses

that could shorten their time to graduation. Because the majority of students enrolled in postsecondary education are no longer “traditional,” introducing some flexibility into the current student aid programs would make it easier for students to participate in postsecondary learning on their own schedules.

**Support programs that provide many low-income and minority students with the financial assistance and guidance they need to attend and graduate college.** The Pell Grant program authorized under the HEA is the primary federal grant program for low-income students. Funding increases will make it easier for low-income students to finance their education. In addition, front-loading the grants, by providing more money in the first two years of college, may also encourage more low-income students to get Associates or Bachelor's degrees.

While financial aid increases access to college for many students, money is sometimes not enough. Many students need guidance to navigate their way onto a college campus, and support to graduate. Already authorized under the HEA are the TRIO and GEAR UP programs,\* which help low-income students complete high school and enter college. Investments in these programs can increase grade point averages and retention rates.<sup>103</sup>

Efforts to influence higher education reform from the state level may allow a more proactive approach. Business leaders interested in launching change in their own states can:

**Demonstrate to governors, legislatures, and the public that supporting higher education is an investment that pays off.** In the annual state budget battles where education competes for funding with Medicaid, corrections, public assistance, and transportation, education is considered an expenditure rather than an investment. Because colleges and universities can offset any budgetary shortfalls with tuition increases, it is tempting for legislators to keep higher education expenditures in check. Convincing state politicians that higher education is an investment rather than an expenditure can help garner commitments for increased higher education spending.

Unlike spending on other public services, investments in higher education can help states improve their financial position if the investments translate into more college graduates who stay in the state, better job opportunities, and increases in income and tax revenues. In addition, the non-economic benefits of a more-educated society, such as increased civic participation and reduced crime rates, will lead to an even higher return on the state's initial investment, and to the nation as a whole.

Business leaders can emphasize the role of higher education in economic growth and development, and help educate politicians and the public about the importance of providing financial support for colleges and universities. For example, business leaders recently played a significant role in persuading the Massachusetts state legislature to implement a statewide pre-kindergarten program. Similarly, business leaders helped reverse substantial funding cuts slated for pre-kindergarten programs in New York state by meeting with key political leaders to demonstrate the important public benefits derived from these programs. In addition to direct lobbying efforts, business groups can also serve as effective mechanisms for developing a coherent message about the benefits of increased investments in higher education, and serve as vehicles for publicizing their support.

**Encourage and assist higher education in developing more efficient and effective management structures and systems.** Business can help educational institutions become more cost-effective by sharing practical knowledge and experience that can increase efficiency and drive down costs. Businesses faced with increasing costs often employ cost-cutting measures, or implement new technologies and new work processes to increase productivity. Higher education is less likely to pursue productivity-enhancing changes and more likely to increase tuitions to cover their rising costs.

Adopting internationally recognized standards for quality management, such as the International Organization for Standardization's “ISO 9000” standards, can help higher education improve management systems and customer satisfaction. ISO 9000 standards were developed by a committee of experts

\* TRIO includes six federal programs designed to motivate and assist low-income, first-generation college students as they progress from middle school through postbaccalaureate programs. GEAR UP provides 5-year grants to states to provide services in high-poverty middle and high schools, as well as scholarships to low-income students.

drawn from a broad array of employment sectors and outline generic management protocols that can be applied to any organization. Similarly, organization management can benefit by implementing enterprise resource planning, or “ERP,” systems, that allow integration of all university departments and functions into a single computer system. ERP systems standardize information, streamline processes, and integrate information from multiple sources, improving efficiency and productivity.

**Promote education through direct corporate involvement.** Business leaders can support education within their states by implementing corporate programs that help improve college readiness and affordability for disadvantaged students. Business can help prepare students for college by supporting local tutoring and mentoring programs, either with employee time or corporate donations. Once students are in college, corporate internship programs provide applied educational experiences that complement classroom learning.

Corporate scholarship programs can help talented disadvantaged students overcome the financial hurdles to a college degree. Corporations can help

employees leverage support for their scholarship contributions by offering matching-grant programs. Many companies already agree to match employee gifts to their alma mater. Similarly, states can leverage corporate support by issuing challenge grants that encourage corporate donations to scholarship programs that are matched with public funds.

#### **Engage in local public-private partnerships.**

Leveraging private investment in education can also be achieved with public-private partnerships. Business can develop and maintain partnerships with educational institutions to exchange ideas, research, and technological innovation. These public-private partnerships can help ensure that technological and research capabilities of colleges and universities are on the cutting edge, and allows business to articulate the kinds of skills they need. Business will also have access to the latest research in addition to new workers who already have the knowledge and skills required in today’s competitive business environment. Other public-private partnerships, like the one nurtured by the Itasca Project in Minneapolis, MN, can help colleges and universities develop systems to engage in regional economic development efforts.

## CONCLUSION

Higher education will play a key role in helping the United States maintain a competitive economic position over the next several decades. Technological change and global competition will require more skilled workers, but demographic realities will make it more difficult to produce the skilled workers we need.

Improving college participation and graduation rates will help ensure the United States has the workers to compete in the global economy. Measures have already been put in place to gauge whether our youngest students are becoming better prepared for college, and while progress is being made, there is

still room for improvement, particularly among disadvantaged and minority populations.

Accompanying these efforts, higher education must address the affordability issues that prevent some students from attending, and leave other students with significant debt.

Business leaders have a vested interest in broadening opportunity in higher education. By engaging in dialogues at both the national and state levels, business leaders can begin to shape and implement systemic reforms that will strengthen our system of higher education.

## APPENDIX

Indicators used in *Measuring Up 2004* to gauge the status and progress of higher education in the nation and the states:

### Preparation Indicators

- 18-to-24-year-olds with a high school credential
- Ninth to twelfth graders taking at least one upper-level math course and at least one upper level science course
- Eighth grade students taking algebra
- Twelfth graders taking at least one upper-level math course
- Eighth graders scoring at or above “proficient” on national assessments in math, reading, science, and writing
- Low-income eighth graders scoring at or above “proficient” on a national assessment in math
- Number of students scoring in the top 20% on SAT/ACT college entrance exams per 1,000 high school graduates
- Number of students scoring three or higher on an Advanced Placement subject test per 1,000 high school juniors and seniors
- Seventh to twelfth graders taught by teachers with a major in their subject

### Participation Indicators

- Chance for college by age 19
- 18-to 24-year-olds enrolled in college
- 25-to 49-year-olds enrolled part-time in any type of postsecondary education

### Completion Indicators

- First-year community college students returning their second year
- Freshmen at four-year colleges/universities returning their sophomore year
- First-time, full-time students completing bachelor's degrees within six years of college entrance
- Certificates, degrees, and diplomas awarded at all colleges and universities per 100 undergraduate students

### Affordability Indicators

- Percent of income needed to pay for college expenses (minus financial aid) at community colleges, public four-year colleges/universities, and private four-year colleges/universities
- State investment in need-based financial aid as compared to the federal investment
- The share of income that the poorest families need to pay for tuition at the lowest-priced colleges
- Average loan amount that undergraduate students borrow each year

### Benefit Indicators

- Population aged 25 to 65 with a bachelor's degree or higher
- Increase in total personal income as a result of the percentage of the population holding a bachelor's degree
- Increase in total personal income as a result of the percentage of the population with some college (including an associate's degree), but not a bachelor's degree
- Residents voting in national elections
- Of those who itemize on federal income taxes, the percentage declaring charitable gifts
- Increase in volunteering as a result of college education
- Adults demonstrating high-level literacy skills (quantitative, prose, and document).

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<b>CEAL</b>	Consejo Empresario de America Latina Buenos Aires, Argentina
<b>CEDA</b>	Committee for Economic Development of Australia Sydney, Australia
<b>CIRD</b>	China Institute for Reform and Development Hainan, People's Republic of China
<b>EVA</b>	Centre for Finnish Business and Policy Studies Helsinki, Finland
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